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ENERGY AND AGRICULTURE

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A recent Upper Midwest Council study suggested that the more important effects on the Upper Midwest food system, if energy supplies are curtailed and if energy prices rise, may be:

1. Increases in food production and processing costs which may adversely affect farm income and increase retail food prices.
2. Shifts in types of products grown and the location of food production and food processing facilities.
3. Continued integration in the food processing industry.
4. Continued land-use conflicts between agriculture and coal mining.

Sector Impacts

Rising prices for fuel oil, fertilizer, and herbicides are expected to contribute to higher production costs. Supplies of propane, fuel oil, and electricity may be curtailed thus causing a shift in type of energy used and possible changes in production techniques as well as type of commodities produced. Cumulative effects may be difficult to predict; e.g., will production of certain types of commodities be shifted away from or into the Upper Midwest? Producers' adjustments to changing energy prices may be offset by changing market conditions. Export food demand may have an important bearing on the final result.

Shifts toward greater use of coal may well intensify land-use conflicts between agriculture and energy development.

The food processing sector may be most affected by changes in energy supplies. Natural gas is particularly important to this sector since it is the only feasible clean-burning fuel currently available for many processes in the meat and dairy processing industries. Technological improvements along with large capital expenditures would be necessary before these processes could utilize another type of fuel. Food processing industries may shift out of the Midwest to states with a sufficient internal supply of natural gas.

Increased costs in the other sectors and higher preparation costs will result in higher retail prices in the consumer sector.

Energy Use

The food system utilizes about 17% of total energy used in the United States today. Food production accounts for 2.9%, food processing for 4.8%, marketing for 1.3%, transport for .4%, and the consumption sector for 7.1% of total national energy use.

Of particular interest to South Dakotans is the food production sector which accounts for 2.9% of total national energy use or about 18% of the energy used in the food system. The figures tend to belie the importance of energy, however, since fuel and fertilizer constitute major inputs in food production, and prices of these inputs are important in determining total production costs.

The mix of gasoline, diesel fuel, and LPG as sources of energy for food production varies a great deal within the Upper Midwest states. In South Dakota, gasoline accounts for 90% of the total of these three fuels used in farming while the regional average is 69%. Diesel fuel provides 8% of the fuel used in South Dakota but 29% for the region. LPG accounts for only about 2-3% of the fuel used; however it is used in such critical areas as heating and crop drying.

The use of natural gas and electricity is growing within the region.

Recommendation

Seventeen recommendations were included in the report, only a few of which can be reported here. The first recommendation was to fully support a national energy plan which should 1) identify clearly stated, specific goals to guide public policies, programs, and regulations and 2) whenever possible, allow market mechanisms to determine energy prices, demand, and supply.

Another recommendation was to establish an advisory task force in each state to improve energy conservation in

the food production sector.

It was recommended that wellhead prices for new interstate natural gas supplies be allowed to rise to the equivalent BTU price of #2 fuel oil while, at the same time, controls should remain on gas produced prior to January 1, 1975. The food processing industry should receive high priority for firm natural gas allocation and the Upper Midwest should work cooperatively to gain equitable solutions to the natural gas supply problem under the premise that natural gas is a national, not individual state, resource.

Careful study of irrigation benefits and costs should be undertaken before installation of systems and, where irrigation is used, maximum efforts should be exerted to conserve water and energy.

The final recommendation urged additional research in solar and wind energy for use in agriculture.

The report, while not all-inclusive, points up some of the problems which may confront agriculture because of energy supply uncertainties and price rises. Policy makers as well as individual farmers may wish to consider the consequences for the future.

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